INCH-POUND
MIL-M-38510/56F
AMENDMENT 1
24 April 1999

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, CMOS, COUNTERS/DIVIDERS, MONOLITHIC SILICON

Inactive for new design after 9 August 1996

This amendment forms a part of MIL-M-38510/56F, dated 19 February 1988, and is approved for use by all Departments and Agencies of the Department of Defense.

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Table I, $I_{IH,}$ device types 01 - 55: Change max limits from “45” to “100” and “-45” to “-100”. For the “-100” limit make the distinction “I_{IL}” in the Symbol column.

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FIGURE 6, Device 03, 05, 53, 55, SW1: Change “$V_{DD}1$” to “$V_{SS}1$”.

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FIGURE 10. Switching time waveforms and test circuit – Continued, t_{PLH} t_{PHL} Reset to output, Clock, device types 01, 02 ; Change limit for t_{PH} at 25°C ≤ -55°C from “500 ns” to “1.111 µs” and for t_{PH} at ≤ 125°C from “750 ns” to “1.429 µs”.

FIGURE 10. Switching time waveforms and test circuit – Continued, t_{PLH} t_{PHL} Reset to output, Clock, device type 03; Change limit for t_{PH} at 25°C ≤ -55°C from “500 ns” to “588 ns” and for t_{PH} at ≤ 125°C from “750 ns” to “769 ns”.

FIGURE 10. Switching time waveforms and test circuit – Continued, t_{PLH} t_{PHL} Reset to output, Clock, device type 04; Change limit for t_{PH} at 25°C ≤ -55°C from “500 ns” to “1.111 µs” and for t_{PH} at ≤ 125°C from “750 ns” to “1.429 µs”

FIGURE 10. Switching time waveforms and test circuit – Continued, t_{PLH} t_{PHL} Reset to output, Clock, device type 05; Change limit for t_{PH} at 25°C ≤ -55°C from “300 ns” to “333 ns” and for t_{PH} at ≤ 125°C from “450 ns” to “455 ns”

FIGURE 10. Switching time waveforms and test circuit – Continued, t_{PLH} t_{PHL} Reset to output, Reset, device type; Change from “51, 54”; to “52, 54”.

FIGURE 10. Switching time waveforms and test circuit – Continued, t_{PLH} t_{PHL} Reset to output, Clock, device type; Change from “51, 54”; to “52, 54”, Change limit for t_{PH} at 25°C ≤ -55°C from “250 ns” to “503 ns” and for t_{PH} at ≤ 125°C from “350 ns” to “704 ns”

FIGURE 10. Switching time waveforms and test circuit – Continued, t_{PLH} t_{PHL} Reset to output, Reset, device type; Change from “52”; to “51”.

FIGURE 10. Switching time waveforms and test circuit – Continued, t_{PLH} t_{PHL} Reset to output, Clock, device type; Change from “52”; to “51”, Change limit for t_{PH} at 25°C ≤ -55°C from “500 ns” to “250 ns” and for t_{PH} at ≤ 125°C from “700 ns” to “350 ns”

FIGURE 10. Switching time waveforms and test circuit – Continued, t_{PLH} t_{PHL} Reset to output, Clock, device type 53; Change limit for t_{PH} at 25°C ≤ -55°C from “335 ns” to “333 ns” and for t_{PH} at ≤ 125°C from “470 ns” to “455 ns”.

FIGURE 10. Switching time waveforms and test circuit – Continued, t_{PLH} t_{PHL} Reset to output, Clock, device type 55; Change limit for t_{PH} at 25°C ≤ -55°C from “200 ns” to “333 ns” and for t_{PH} at ≤ 125°C from “280 ns” to “455 ns”.

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AMSC N/A

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TABLE III, I_{IL1}, Max limits column: Change “-3.0” to “-300.0”.
TABLE III, I_{IL2}, Max limits column: Change “-1.0” and “-45.0” to “-100.0” and “-100.0” respectively.
TABLE III, I_{IH1}, Max limits column: Change “3.0” to “300.0”.
TABLE III, I_{IH2}, Max limits column: Change “1.0” and “45.0” to “100.0” and “100.0” respectively.

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TABLE III, I_{IL1}, Max limits column: Change “-9.0” to “-900.0”.
TABLE III, I_{IL2}, Max limits column: Change “-1.0” and “-45.0” to “-100.0” and “-100.0” respectively.
TABLE III, I_{IH1}, Max limits column: Change “9.0” to “900.0”.
TABLE III, I_{IH2}, Max limits column: Change “1.0” and “45.0” to “100.0” and “100.0” respectively.

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TABLE III, I_{IL1}, Max limits column: Change “-2.0” to “-200.0”.
TABLE III, I_{IL2}, Max limits column: Change “-1.0” and “-45.0” to “-100.0” and “-100.0” respectively.
TABLE III, I_{IH1}, Max limits column: Change “2.0” to “200.0”.
TABLE III, I_{IH2}, Max limits column: Change “1.0” and “45.0” to “100.0” and “100.0” respectively.

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TABLE III, I_{IL}, Clock, Max limits column: Change “-1.0” and “-45.0” to “-100.0” and “-100.0” respectively.
TABLE III, I_{IL}, Reset, Max limits column: Change “-1.0” and “-45.0” to “-100.0” and “-100.0” respectively.
TABLE III, I_{IH}, Clock, Max limits column: Change “1.0” and “45.0” to “100.0” and “100.0” respectively.
TABLE III, I_{IH}, Reset, Max limits column: Change “1.0” and “45.0” to “100.0” and “100.0” respectively.

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TABLE III, I_{IL1}, Max limits column: Change “-3.0” to “-300.0”.
TABLE III, I_{IL2}, Max limits column: Change “-1.0” and “-45.0” to “-100.0” and “-100.0” respectively.
TABLE III, I_{IH1}, Max limits column: Change “3.0” to “300.0”.
TABLE III, I_{IH2}, Max limits column: Change “1.0” and “45.0” to “100.0” and “100.0” respectively.

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TABLE III, I_{IL1}, Max limits column: Change “-9.0” to “-900.0”.
TABLE III, I_{IL2}, Max limits column: Change “-1.0” and “-45.0” to “-100.0” and “-100.0” respectively.
TABLE III, I_{IH1}, Max limits column: Change “9.0” to “900.0”.
TABLE III, I_{IH2}, Max limits column: Change “1.0” and “45.0” to “100.0” and “100.0” respectively.

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TABLE III, I_{IL1}, Max limits column: Change “-2.0” to “-200.0”.
TABLE III, I_{IL2}, Max limits column: Change “-1.0” and “-45.0” to “-100.0” and “-100.0” respectively.
TABLE III, I_{IH1}, Max limits column: Change “2.0” to “200.0”.
TABLE III, I_{IH2}, Max limits column: Change “1.0” and “45.0” to “100.0” and “100.0” respectively.

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TABLE III, I_{IL1}, Max limits column: Change “-3.0” to “-300.0”.
TABLE III, I_{IL2}, Max limits column: Change “-1.0” and “-45.0” to “-100.0” and “-100.0” respectively.
TABLE III, I_{IH1}, Max limits column: Change “3.0” to “300.0”.
TABLE III, I_{IH2}, Max limits column: Change “1.0” and “45.0” to “100.0” and “100.0” respectively.

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TABLE III, I_{IL}, Clock, Max limits column: Change “-1.0” and “-45.0” to “-100.0” and “-100.0” respectively.
TABLE III, I_{IL}, Reset, Max limits column: Change “-1.0” and “-45.0” to “-100.0” and “-100.0” respectively.
TABLE III, I_{IH}, Clock, Max limits column: Change “-1.0” and “-45.0” to “-100.0” and “-100.0” respectively.
TABLE III, I_{IH}, Reset, Max limits column: Change “1.0” and “45.0” to “100.0” and “100.0” respectively.

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TABLE VIII, Threshold-voltage test conditions; Delete and replace with the following:

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Device type	GND	10 V	V_{TN} measured at		GND	-10 V	V_{TP} measured at	
			-20 µA supply	-10 µA supply			10 µA supply	10 µA supply
01 51	15	16		8, 13, 14	15	8		13, 14, 16
02 52	15	16		1, 2, 3, 7-10, 12, 14	15	1, 2, 3, 7-10, 12, 14		16
03 53	10	8, 11		8, 11	11	16		16
04 54	14	13, 15, 16		8	14	8, 13, 15		16
05 55	1	14		2, 7	1	2, 7		14

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CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - EC
Air Force - 11
NASA - NA
DLA - CC

Preparing activity:
DLA - CC

Review activities:
Navy - AS, CG, MC, OS, SH
Army - AR, MI, SM
Air Force - 19, 85, 99

(Project 5962-1839)